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CERAPHRONOID WASPS (HYMENOPTERA, CERAPHRONOIDEA) OF THE FAUNA OF THE UKRAINE COMMUNICATION 1

V. N. Alekseev[1], T. D. Radchenko[2]

[1]*Orekhovo-Zuevo Pedagogical Institute, Moscow obl., Orekhovo-Zuevo, Zelenaja str., 22, 142611 Russia*
[2]*Ukrainian State Ecologically-Naturalist Center, Vyshgorodskaya str., 19, Kyiv, 04074 Ukraine*
E-mail: rad@usenc.kiev.ua

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Ceraphronoid Wasps (Hymenoptera, Ceraphronoidea) of the Fauna of the Ukraine. Communication 1. Alekseev V. N., Radchenko T. D. — A brief review of cerafronoid wasps of the Ukrainian fauna is given. Keys to families, subfamiles, genera, and species of the family Megaspilidae (except for the genus *Conostigmus*) known from Ukraine is provided.

Key words: Hymenoptera, Ceraphronoidea, taxonomy, fauna, Ukraine.

Церафроноидные наездники (Hymenoptera, Ceraphronoidea) фауны Украины. Сообщение 1. Алексеев В. Н., Радченко Т. Д. — В статье дан краткий обзор церафроноидных наездников фауны Украины и приведены оригинальные таблицы для определения подсемейств и семейств, а также родов и видов семейства Megaspilidae (за исключением рода *Conostigmus*), найденных в Украине.

Ключевые слова: Hymenoptera, Ceraphronoidea, таксономия, фауна, Украина.

Introduction

The ceraphronoid wasps are quite common in the Holarctic Region, but they are one of the most poorly studied group of the parasitic hymenopterous insects. They have not been specially reviewed in Ukraine and less than 20 species of them have been registered on its territory till now (Алексеев, 1978). The previously published keys also require improvements.

The principal task of this study is survey of Ceraphronoidea of the Ukrainian fauna, which is based on investigation both of the rich collections of the I. I. Schmalhausen Institute of Zoology, Kyiv, and those collected personally by the authors during last few years.

In this paper we provide the original keys for the identification of the families, subfamilies, genera and species of Ceraphronoidea known from the Ukraine and adjacent territories, which could be found in Ukraine. Also brief remarks are given for each genus.

More than 3000 specimens of Ceraphronoidea have been examined during this work. They were collected in the following districts of the Ukraine: Cherkassy, Chernigov, Chernovtsy, Dnipropetrovsk, Donetsk, Ivano-Frankovsk, Kyiv, Kharkov, Kherson, Khmelnitsky, Lugansk, Lviv, Nikolaev, Odessa, Poltava, Rivne, Sumy, Transcarpathian, Vinnitsa, Zaporizhzha, Zhytomir and in the Crimea.

The first part of this work contains keys to families and subfamiles, genera and species of the family Cerafronidae (except for the genus *Conostigmus*). Among the above mentioned taxonomic groups three genera (*Holophleps* Kozlov, *Megaspilus* Westwood and *Laginodes* Förster), and 14 species are found for the first time in the Ukraine; all of them are marked below by an asterisk (*).

Terminology and abbreviations: Thorax=mesosoma in Hymenoptera; Gaster=metasoma in Hymenoptera; L/W — length/width relation; A1–A11 — Antennal joints (A1=scape, A2=pedicel, A3=first funicular joint, etc.).

Results

Superfamily CERAPHRONOIDEA

Taxonomy: Masner, Dessart, 1967; Алексеев, 1978, 1995; Dessart, Cancemi, 1986.

Small to very small parasitic hymenopterous insects (body length 0.5–4.5 mm, usually 1–2 mm) with reduced wing venation; abdomen is without typical for other

Apocrita peduncle. Antennae are 7—11-segmented, scape usually longer than each of the other antennal joints. Mesonotum is separated from scutellum and axillae by transversal suture, primary with median furrow and notauli; smaller species sometimes are without notauli and even without median furrow (genus *Aphanogmus*). Posterio-upper corners of pronotum reach of tegulae. Forewings with a large semioval pterostigma and radial vein, or only with the latter one. Tibiae of forelegs with two apical spurs. VI abdominal tergite of the Megaspilidae medially is with a very characteristic reticulate alveolary area — Waterston's organ. Ovipositor is short, rarely surpassing the top of the abdomen. Male genitalia are with articulated mobile parameres and reduced cuspices.

Ceraphronoids are primary parasites and hyperparasites of Diptera, Homoptera (Aphidae), Hymenoptera, Neuroptera and some other insects. Several species are myrmecophilous. Biology of the majority of cerafronoid species is still unknown.

Up to now about 25 genera and 500 species are described Worldwile, but this number is much less than the real one.

A key to families of the Ceraphronoidea

Таблица для определения семейств надсемейства Ceraphronoidea

1. Antennae 11-segmented in both sexes. Tibiae of all legs with two apical spurs; longer tibial spur of forelegs forked apically (fig. 1, *1*). Second gastral tergite narrowed anteriorly, with crenulate collar (fig. 1, *3*; 2, *7, 8*) (with exception of the genus *Creator*, fig. 2, *5*). Waterston's organ absent (fig. 1, *3*). Forewings with large pterostigma (fig. 1, *6*; 2, *1, 2, 12—15*); very rare (in males of Lagynodinae) pterostigma absent (fig. 1, *10, 13*). .... Family Megaspilidae

— Antennae of females 7—10-segmented, antennae of males 11-segmented. Tibiae of fore- and hind legs with two apical spurs, tibiae of midlegs with one spur; longer tibial spur of forelegs not forked apically (fig. 1, *2*). Second gastral tergite not narrowed anteriorly, without crenulate collar; waterston's organ presents (fig. 1, *4, 5*). Forewings without pterostigma (fig. 1, *7*). .... Family Ceraphronidae

Family MEGASPILIDAE

A key to subfamilies of the family Megaspilidae

Таблица для определения подсемейств семейства Megaspilidae

1. Forewings without pterostigma, only with radial vein (aigs 1, *10, 13*). Second gastral tergite with three distinct longitudinal carinae at its base (fig. 1, *9—14*). Mesonotum of apterous or brachypterous forms without longitudinal furrows or only with median furrow (fig. 1, *8, 9, 11, 12*). .... Subfamily Lagynodinae

— Forewings with pterostigma (fig. 1, *6*; 2, *1, 2, 12—15*). Second gastral tergite with numerous distinct longitudinal carinae at its base (fig. 2, *5, 7, 8*). Mesonotum of apterous or brachypterous forms with longitudinal median furrow and notauli or at least with trace of notauli (fig. 2, *16, 17*). .... Subfamily Megaspilinae

Subfamily LAGINODINAE

A key to the genera

Таблица для определения родов

1. Eyes and ocelli absent. Dorsum of thorax without furrows and sutures (fig. 1, *8*). .... 1. *Thyphlolagynodes* Dessart

— Eyes present. Dorsum of thorax even in apterous females at least with transversal sutures (fig. 1, *9, 11, 12*). 2

2 (1). Forewings of males well developed, with long radial vein (fig. 1, *10,13*), or reduced. Females apterous, with hypertrophied pronotum and reduced other parts of thorax (fig. 1, *9, 11, 12*). .... 2. *Lagynodes* Förster

— Forewings of males well developed but without radial vein (fig. 1, *14*). Females unknown. .... 3. *Holophleps* Kozlov*

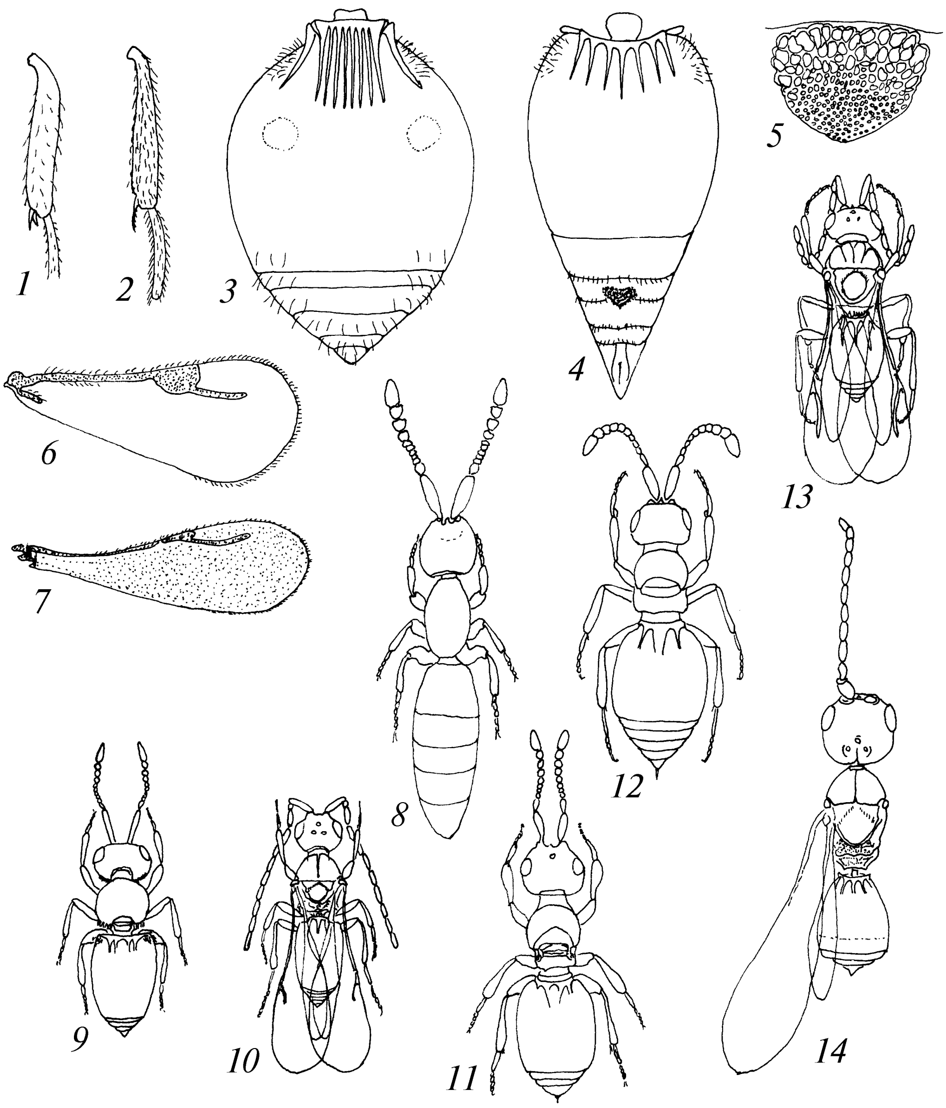


Fig. 1. Details of strucrture of memebers of the superfamily Cerafronoidea: *1, 3, 6 — Megaspilus* sp.; *2, 4, 5, 7 — Ceraphron* sp.; *8 — Typhlolagynodes phineus* (}); *9, 10 — Lagynodes acuticornis* (*9* — }, *10* — {); *11 — Lagynodes thoracicus* (}); *12, 13 — L. pallidus* (*12* — }, *13* — {); *14 — Holophleps brevigena* ({). *1, 2* — mid tibia; *3, 4* — gaster from above; *5* — Whaterrston's organ; *6, 7* — fore wings; *8–14* — body from above.

Рис. 1. Детали строения представителей надсемейтва Cerafronoidea: *1, 3, 6 — Megaspilus* sp.; *2, 4, 5, 7 — Ceraphron* sp.; *8 — Typhlolagynodes phineus* (}); *9, 10 — Lagynodes acuticornis* (*9* — }, *10* — {); *11 — Lagynodes thoracicus* (}); *12, 13 — L. pallidus* (*12* — }, *13* — {); *14 — Holophleps brevigena* ({). *1, 2* — голень средней ноги; *3, 4* — брюшко сверху; *5* — орган Уотерстона; *6, 7* — передние крылья; *8–14* — тело сверху.

1. ***Thyphlolagynodes*** Dessart, 1981

Type species: *Thyphlolagynodes phineus* Dessart, 1981.

Monotypic genus, known from the West Europe. *Thyphlolagynodes phineus*, more probably, is cryptobiotic species, what has caused the loss of eyes.

Could be found in the Ukraine.

2. *Lagynodes* Förster, 1840*

Type species: *Laginodes rufus* Förster, 1840.
Taxonomy: Dessart, 1966, 1977, 1987 = *Plastomicrops* Kieffer, 1906.

Species with well develop sexual dimorphism. Colour of body of apterous females is reddish-yellow or brown. They are also characterized by strongly modified thorax. Males usually are marcopterous, but forewings without pterostigma, only with radial vein. Mesonotum of males with well developed longitudinal furrows.

Biology is unknown. Females and males can be collected both in grass and in the nests of different ant species. In the world are known about 20 species.

A key for identification of the *Lagynodes* species

Таблица для определения видов рода *Lagynodes*

1. Junctions between head and thorax and thorax and gaster with dense short hairs. Females: pronotum not shorter than half of thorax length; apical funicular joint conical, with slightly pointed tip (fig. 1, *9*). Males: notauli present only anteriorly (fig. 1, *10*), wings sometimes reduced. Body length 0.5–1.0 mm. — Holarctic. .... *L. acuticornis* (Kieffer)*

— Junctions between head and thorax and thorax and gaster without dense short hairs. Females: pronotum shorter than half of thorax length; apical funicular joint elliptical, rounded at the tip (fig. 1, *11, 12*). Males: notauli complete or almost complete (fig. 1, *13*). 2

2 (3). Eyes relatively small, situated in front of midlength of sides of head (viewed in front). Body colour pale-yellow. Body length 1.0–1.1 mm. — West Europe. .... *L. occipitalis* Kieffer

— Eyes relatively large, situated at midlength of sides of head. 3

3 (2). Females: frons with depression behind interantennal carina; wings strongly reduced, scale-like, not reach midlength of propodeum (fig. 1, *11*). Males: radial vein relatively short, not more that 2 times longer than length of marginal and postmarginal veins together. Body lenghth 0.8–1.1 mm. — Europe. .... *L. thoracicus* Kieffer*

— Females: frons without depression behind interantennal carina; wings not visible without dissection (fig. 1, *12*). Males: radial vein relatively long, 2–4 times longer than length of marginal and postmarginal veins together (fig. 1, *13*). Body length 1.0–2.5 mm. Colour of females strongly variable, from pale-yellow to blackish-brown. Males black or blackish-brown. Very common, probably cosmopolitan, species, often inhabits nests of the ants of the genus *Formica* L. ....*L. pallidus* (Boheman)*

Laginodes acuticornis (Kieffer)

Material. }, Ukraine: «15 км южнее Киева, Конча-Заспа, 17.05.1997 (Радченко)» [15 km S Kyiv, Koncha-Zaspa, Radchenko leg.]; }, idem, 12.07.1997 (Радченко) [Radchenko leg.] (SIZK).

L. pallidus (Boheman)

Material. {, Ukraine: «Закарпатская обл., окр. Рахова, Карпатский заповедник, 20.04.1994 (Симутник)» [Zakarpats'ka oblast, vic. Rakhiv, Karpatsky Natural Reserve, Simutnik leg.]; {, idem, 22.07.1996 (Симутник) [Simutnik leg.]; }, idem, «Чорногора, ур. Билый, 01.08.1994 (Симутник)» [Chornogora, Bilyi, Simutnik leg.]; }, «Киев, Голосеево, 28.07.1996 (Радченко)» [Kyiv, Golosievo, Radchenko leg.] (SIZK).

L. thoracisus Kieffer

Material. }, Ukraine: «Закарпатская обл., окр. Рахова, Карпатский заповедник, 22.07.1996 (Симутник)» [Zakarpats'ka oblast, vic. Rakhiv, Karpatsky Natural Reserve, Simutnik leg.] (SIZK).

3. *Holophleps* Kozlov, 1966*

Type species: *Holophleps brevigena* Kozlov, 1966.
Taxonomy: Козлов, 1966; Dessart, 1977.

Monotypic genus, females and biology are unknown.

Holophleps brevigena Kozlov

Material. {, Ukraine: «Донецкая обл., Ново-Азовский р-н, заповедник «Хомутовская степь», 19.05.1995 (Кононова)» [Donetsk oblast, Novo-Azovsky raion, Natural Reserve “Khomutovskaya Step”, Kononova leg.] (SIZK).

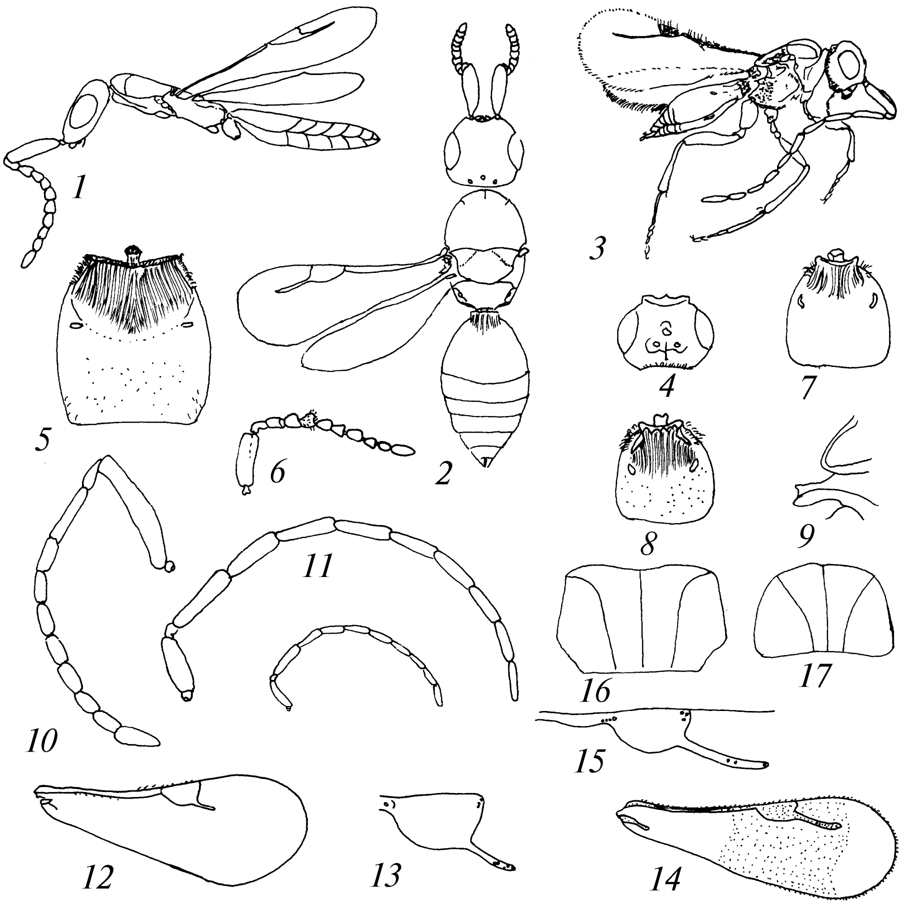


Fig. 2. Details of strucrture of the memebers of the subfamily Megaspilinae: *1, 2 — Platyceraphron muscidarum* (}); *3, 4 — Conostigmus basalis* ({); *5, 6 — Creator spissicornis* ({); *7, 10 — Megaspilus dux* (}); *8 — Megaspilus striolatus; 11 — Megaspilus dux* ({); *12, 13 — Trichosteresis glabra; 14, 15 — Dendrocerus flavipes; 9, 16 — Megaspilus sp.; 17 — Conostigmus* sp.*; 18 — Conostigmus abdominalis* ({). *1, 3 —* body in profile*; 2 —* body frome above; *4 —* head from above; *5, 7, 8 —* first gastral tergite frome above; *6, 10, 11, 18 —* antenna; *9 —* intercalary segment; *12, 14 —* fore fewing; *13, 15 —* pterostigma; *16, 17 —* mesonotum.

Рис. 2. Детали строения представителей подсемейства Megaspilinae: *1, 2 — Platyceraphron muscidarum* (}); *3, 4 — Conostigmus basalis* ({); *5, 6 — Creator spissicornis* ({); *7, 10 — Megaspilus dux* (}); *8 — Megaspilus striolatus; 11 — Megaspilus dux* ({); *12, 13 — Trichosteresis glabra; 14, 15 — Dendrocerus flavipes; 9, 16 — Megaspilus* sp.*; 17 — Conostigmus* sp.*; 18 — Conostigmus abdominalis* ({). *1, 3 —* тело в профиль*; 2 —* тело сверху; *4 —* голова сверху; *5, 7, 8 —* 1-й тергит брюшка сверху; *6, 10, 11, 18 —* усик; *9 —* промежуточный сегмент с желобообразной пластинкой; *12, 14 —* переднее крыло; *13, 15 —* птеростигма; *16, 17 —* мезонотум.

Subfamily MEGASPILINAE

A key to the genera

Таблица для определения родов

1. Whole body, especially thorax, strongly flattened dorsoventrally, thorax more than 3.5 times longer than its height (fig. 2, *1*). Ocelli forming obtuse triangule (fig. 2, *2*). Both females ans males always macropterous. .... 4. *Platyceraphron* Kieffer

— Body not flattened dorsoventrally, if slightly flattened then ocelli forming not obtuse triangle (fig. 2, *3, 4*). 2

2 (1). Second gastral tergite very slightly narrowed anteriorly and forming broad bolster (fig. 2, *5*). A6 and A7 of males short, serrate in profile (fig. 2, *6*). .... 5. *Creator* Alekseev

— Second gastral tergite strongly narrowed anteriorly, with distinct crenulate collar (fig. 1, *3*; 2, *7, 8*). A4 to A8 of males not less than 3 times longer than broad, or with long processes (fig. 2, *11, 18*; 3, *1–4*). 3

3 (2). Propodeum with median double-toothed lamellate projection (fig. 2, *9*). Antennal funiculus of females long and filiform, its joints long, A4 at least 4 times longer than broad (fig. 2, *10*). .... 6. *Megaspilus* Westwood*

— Propodeum without median double-toothed lamellate projection, often without projection or with small spine. Antennal funiculus of female slightly extended medially or toward the apex, A4 usually less than twice longer than broad (fig. 4, *5–17*). 4

4(3). Wings glassy-trasparent, covered by very short, microscopic pubescence, distal margin of wings behind pterostigma without row of short hairs; radial vein short, about 1,5 times shorter than pterostigma (fig. 2, *12, 13*). Relatively large, 1.9–3.8 mm. .... 7. *Trichosteresis* Förster

— Wings not glassy-transparent, with normal pubescence, distal margin of wings behind pterostigma with row of short hairs; radial vein long, at least as long as pterostigma (fig. 2, *14, 15*). Relatively small, 2.0–2.5 mm. 5

5 (4). Notauli sharply angulate anteriorly (fig. 2, *16*). A3 to A9 of males clearly asymmetrical, often strongly serrate or with long projections (only in *D. pupparum* they are cylindrical) (fig. 3, *1–7, 9–15*). Brachypterous forms are exceptionally rare. .... 8. *Dendrocerus* Ratzeburg

— Notauli only slightly and steply angulate anteriorly (fig. 2, *17*). Antennal funiculus of males filiform, with long cylindrical joints (fig. 2, *18*). Brachypterous or apterous forms are usual. .... 9. *Conostigmus* Dahlbom

4. *Platyceraphron* Kieffer, 1906

Type species: *Platyceraphron muscidarum* Kieffer, 1906.
Taxonomy: Dessart, 1971; Dessart, Cancemi, 1986.

Holarctic genus, in West Europe found one species (*P. muscidarum* Kieffer), which could be found in the Ukraine. Parasite of the larvae of *Lonchaea tarsata* Fll., *L. laticornis* Mg. and *Helina* sp. (Diptera, Lonchaeaidae), which develop under bark of trees.

5. *Creator* Alekseev, 1980

Type species: *Dendrocerus spissicornis* Hellen, 1966.
Taxonomy: Алексеев, 1980; Dessart, Cancemi, 1986.

Monotypic genus, found in the Finland, Sweden, Moscow oblast and Far East. Could be found in the Ukraine.

Parasite of puparia of *Macronichia striginervis* Ztt. (Diptera, Sarcophagidae) and *Zabrachia minutissima* Ztt. (Diptera, Stratiomyiidae), which develop under barks or in the wood of living fir trees.

6. *Megaspilus* Westwood, 1829*

Type species: *Ceraphron dux* Curtis, 1829.
Taxonomy: Dessart, 1972 b; Dessart, Cancemi. 1986 = *Habropelte* Thomson, 1858.

Holarctic genus, 2 species are known from the Palaearctic.

A key for identification of the *Megaspilus* species

Таблица для определения видов рода *Megaspilus*

1. Longitudinal carinae on second gastral tergite reach 1/3 of its length, remainder part of this tergite is smooth (fig. 2, *7*). Body length 2.7–4.2 mm. — Ukraine, Georgia, Iran, Jakutia. .... *M. dux* (Curtis)*

— Longitudinal carinae on second gastral tergite reach half of its length, remainder part of this tergite sparsely punctured (fig. 2, *8*). Body length 2.9–3.2 mm. — Europe, Far East. .... *M. striolatus* (Thomson)*

New genus to the Ukraine

Megaspilus dux (Curtis)

Material. }, Ukraine: «Ивано-Франковская обл., Ворохтянский р-н, п. Пожежевск, 19.07.1972 (Кононова)» [Ivano-Frankivs'k oblast, Vorokhtiansky raion, Pozhezhevsk, Kononova leg.]; 2 }, «Одесская обл., окр. Вилково, 21.05.96 (Максимович)» [Odesa oblast, vic. Vilkovo, Maksimovich leg.] (SIZK).

M. striatus (Thomson)

Material. {, Ukraine: «Крым, окр. Алушты, с. Малый Маяк, 12.09.1979 (Кононова)» [Crimea, vic. Alushta, vil. Malyi Maiak, Kononova leg.]; {, «Крым, Чатырдаг, кордон Суат, 15.07.1979 (Кононова)» [Crimea, Chatyrdagh, Suat, Kononova leg.] (SIZK).

7. *Trichosteresis* Förster, 1856

Type species: *Ceraphron glaber* Boheman, 1832.
Taxonomy: Dessart, Cancemi, 1986 = *Thliboneura* Thomson, 1858.

The only one cosmopolitan species occurs in the Palearctic — *Trichosteresis glabra* (Boheman), which is parasite of syrphid puparia — *Syrphus ribesii* L., *S. luniger* Mg., *S. serarius* Wd., *S. balteatus* De Geer, *Sphaerophoria scripta* L., *S. cylindrica* Say, *Scaeva pyrastri* L., *S. albomaculata* Mcq., *Metasyrphus collorae* F. (Diptera, Syrphidae). Should be found in the Ukraine.

8. *Dendrocerus* Ratzeburg, 1852

Type species: *Dendrocerus lichtensteinii* Ratzeburg, 1852.
Taxonomy: Алексеев, 1980; Dessart, 1972 a; Dessart, Cancemi, 1986; Fergusson, 1980.
= *Lygocerus* Förster, 1856 = *Macrostigma* Rondani, 1877 = *Atritomus* Förster, 1878 = *Prodendrocerus* Kieffer, 1907 = *Atritomellus* Kieffer, 1914 = *Neolygocerus* Ishii, 1951.

Basal funiclar joints of males trapeziiform, serrate or ramose (with only few exceptions). Gastral collar short and narrow. Brahypterous forms are very rare. Usually aphid's hyperparasites.

A key for identification of the *Dendrocerus* species

Таблица для определения видов рода *Dendrocerus*

1. Males. Basal funicular joints serrate or ramose, if they cylindrical, funiculus filiform, nor enlarged at the midlength; A2 short, 1.2–1.7 (usually 1.4–1.6) times longer than broad, pyriform (fig. 3, *1–15*); funicular pubuscence often longer than width of segments. 2

— Females. All funicular joints cylindrical, funiculus slightly enlarged at the midlegth; A2 elongate, 2,1–3,0 (usually 2,4–2,7) times longer than broad, not pyriform (fig. 4, *5–18*); funicular pubescence always shorter than width of segments. 18

2 (1). Scutellum with small sharp spine posteriorly. Mesonotum strongly convex anteriorly, pronotum overlapped by scutum, and its anterior margin not visible from above. A3-A8 ramose, with projections; projection of A8 short, tuberculate (fig. 3, *1*). Genitalia: parameres prominent and narrowed at the apex, laminae volsellaris with 3 setae at the apex. Head and thorax black, gaster dark brown. Body length 1.7 mm (subgenus *Neolygocerus* Ishii). — Italy, Japan. .... *D.* (*N.*) *koyamai* (Ishii)

— Scutellum without sharp spine. Mesonotum not convex anteriorly, pronotum not overlapped by scutum, and its anterior margin clearly visible from above. Funicular joints with projections or without them (fig. 3, *2–15*). 3

3 (2). A3–A6 with long processes, which always distinctly longer than length of corresponding joints (subgenus *Dendrocerus* s. str.) (fig. 3, *2–3*). 4

— Funicular joints not ramose, without processes or with short processes, which not longer than length of corresponding joints (fig. 3, *4–15*). 5

4 (3). Process on A7 shorter than length of A7 or A8 (fig. 3, *2*). Hindwings without anal lobe. Body length 1.3–1.8 mm. — Europe, Far East. .... *D.* (*D.*) *halidayi* (Curtis)

— Process on A7 longer than length of A7 or A8. (fig. 3, *3*). Body length 1.4–2.4 mm. — Europe, Caucasus, Japan. .... *D.* (*D.*) *ramicornis* (Boheman)

5 (4). Notauli incomplete, present only anteriorly (subgenus *Atritomellus* Kieffer). 6

— Notauli complete, reaching posterior margin of mesonotum (subgenus *Macrostigma* Rondani). 9

6 (5). A3–A6 with processes, which are same length as corresponding joints (fig. 3, *4*). Females unknown. — Italy, Spain, North Africa. Probably secondary parasite; recorded from predators of coccids of the family Diaspididae — *Pharoscymnus ovoideus* Sic., *Ph. numidicus* Sic. and *Scymnus* sp., parasitized by *Homalotylus flaminius* Dalman (Encyrtidae). ..... *D.* (*A.*) *ergensis* (Guesquiere)

— Funicular joints without processes, serrate or trapeziiform (figs 3, *5–15*). 7

7 (6). Mesonotum and scutellum broad, narrower only in small specimens: L/W of mesonotum 0.4–0.7. A3 1.8–2.0 times shorter than scape (fig. 3, *5, 6*). 8

— Mesonotum and scutellum somewhat narrower: L/W of mesonotum 0.7–0.8. A3 approximately same length as scape. Body black or dark brown, legs pale yellow to light brown, only distal tarsal segments brown. Body length 1.7–1.8 mm. — Europe, Mongolia. .... *D.* (*A.*) *flavipes* Kieffer

8(7). A3–A6 clearly elongate (L/W of A3 2.4–3.0, of A4–A6 2.3–2.6) (fig. 3, *5*); scape with distinct light-coloured basal ring. Body length 1.3–1.7 mm. — Europe, Iceland, Far East, Japan. .... *D.* (*A.*) *laticeps* (Hedicke)

— A3–A6 only slightly elongate (L/W of A3 1.5–2.5, of A4–A6 1.2–1.4) (fig. 3, *6*); scape usually completely dark. Body length 0.9–1.1 mm. — Europe, North Africa, Far East, Japan. .... *D.* (*A.*) *laevis* (Ratzeburg) = *D.* (*A.*) *applanatus* Dessart

9 (5). Mesepisternum smooth and shiny, at most with very fine superficial sculpture. Funicular joints almost cylindrical or slightly trapeziiform, 2.3–3.3 times longer than broad (fig. 3, *7*). Body length 1.8–1.9 mm. — Europe, Siberia (Taimyr). .... *D.* (*M.*) *bifoveatus* (Kieffer)

— Mesepisternum distinctly sculptured. 10

10 (9). A5–A10 almost cylindrical, hairs on funicular joints distinctly shorter than width of joints (fig. 3, *8*). Parameres elongate, same length as basiparameres. By some features similar to members of the genus *Conostigmus*. Body length 1.9–2.0 mm. — Europe, North Africa, Middle Asia, Mongolia, Far East, Canada. .... *D.* (*M.*) *pupparum* (Boheman)

— Funicular joints clearly serrate or trapeziiform (fig. 3, *9–15*), hairs on funicular joints not shorter (usually longer) than width of joints. Parameres not elongate, distinctly shorter than basiparameres. 11

11 (10). A3–A5 very strongly serrate (L/W of A3 and A4 1.1–1.2) (fig. 3, *9*). Body length 1.7–1.8 mm. — Europe, South Siberia (Buryatia), Mongolia. .... *D.* (*M.*) *serricornis* (Boheman)

— A3–A5 less serrate, A4 clearly longer than broad (its L/W not less than 1.4) (fig. 3, *10–15*). . 12

12 (11). Toruli connected by interantennal carina. 13

— Interantennal carina absent. 15

13 (12). Scape shorter than sum of length of A2+A3 or A3+A4 (fig. 3, *10*), yellow. Body length 2.0–2.3 mm. — Europe, Middle Asia, Siberia (Taimyr). .... *D.* (*M.*) *basalis* (Thomson)

— Scape equal or longer than sum of length of A2+A3 or A3+A4 (fig. 3, *11*). 14

14 (13). Scape equal or slightly longer than sum of length of A2+A3 (fig. 3, *11*). Hairs on basal funicular joints longer than width of joints. This species is very variable in size and colour of the body, scape, wings and legs. Body length 1.2–1.5 mm. — One of the most common species of *Dendrocerus,* probably is cosmopolite. .... *D.* (*M.*) *aphidum* (Rondani) = *D. bicolour* Kieffer

— Scape equal or slightly shorter than sum of length of A2+A3+A4. Basal third of scape usually yellow. — Iceland, Europe, North Africa, Japan. One of the most common species of *Dendrocerus*. .... *D.* (*M.*) *dubiosus* (Kiefer) = *Lygocerus flavus* Hellen

15 (12). A3 2.3–2.5 times longer than broad, trapeziiform, its lateral sides almost parallel (figs 3, *13, 15*). ... 16

— A3 only 1.7–1.8 times longer than broad, dorsally slightly convex, its lateral sides not parallel (fig. 3, *12, 14*). 17

16 (15). Length of hairs on funicular joints approximately equal to the width of joints (fig. 3, *15*). Body length 2 мм. — Europe, North Africa, Transcaucasus, Middle Asia, Far East, South America. .... *D.* (*M.*) *breadalbimensis* Kieffer

— Hairs on funicular joints distinctly longer than width of joints (fig. 3, *13*). Body length 2.2 mm. — West Europe. .... *D.* (*M.*) *remaudierei* Dessart

17 (15). Notauli strongly convergent posteriorly, V-shaped, meeting or almost meeting median furrow at scutal suture, not strongly curved at the ends (look with a lateral light). Body length 1.2–1.5 mm. — North and Central Europe, Far East. Quite rare. .... *D.* (*M.*) *liebscheri* Dessart

— Notauli only slightly convergent posteriorly, U-shaped, not meeting median furrow or if they meet or almost meet median furrow, then they strongly curved at the ends. Body length 1.2–1.9 mm. — Very common species, probably cosmopolite. .... *D.* (*M.*) *carpenteri* (Curtis)

18 (1). Notauli incomplete, present only anteriorly. 19

— Notauli complete, reaching posterior margin of mesonotum. 22

19 (18). Thorax long and narrow, 1.6–1.9 times longer than broad. Forewings with brown band beneath of pterostigma and radial vein (fig. 4, *1*). Gastral collar whitish or light yellow, distinctly lighter than remainder parts of gaster. Body length 1.2–1.9 mm. — Parasite of *Coniopteryx esbenpeterseni* Tjeder (Neuroptera, Coniopterygidae). .... *D.* (*A.*) *flavipes* Kieffer

— Thorax short and wide, 1.3–1.4 times longer than broad. 20

20 (19). Scape more than 5.5 times longer than broad (fig. 4, *6*). — A solitary external parasite of cocons of Coniopterygidae (Neuroptera). .... *D.* (*D.*) *halidayi* (Curtis)

— Scape less than 4.7 times longer than broad (fig. 4, *7, 8*). 21

21 (20). A3 slightly longer than A2 (fig. 4, *7*). Scape usually with distinct light-coloured basal ring. Body length very variable, 1.3–2.0 mm. — Hyperparasite of different aphids, parasitized by Aphidiidae. The most typical its hosts in faunistic complexes of the European deciduous forests are aphidiid's genera *Trioxys* Haliday and *Binodoxys* MacKauer — parasites of aphids *Aphis pomi* De Geer, *Chromaphis juglandicola* Kalt. and *Periphyllus* sp. .... *D.* (*A.*) *laticeps* (Hedicke)

— A3 usually shorter than A2, sometimes has same length (fig. 4, *8*). Colour of scape usually completely dark. Body length not more than 1.5 mm, usually much smaller, about 0.8 mm. — Parasite and hyperparasite of aphids and coccids. .... *D.* (*A.*) *laevis* (Ratzeburg)

22 (18). Margins of forewings without pubescence, only with a few hairs on costal vein; wing membrane with very short, microscopic pubescence. Forewings darkened beneath pterostigma and radial vein (fig. 4, *2*). There are also brachypterous forms. Males and biology are unknown. Body length 2.0–2.1 mm. — North and West Europe, North Africa. .... *D.* (*M.*) *punctipes* (Boheman)
— Margins of forewings with fringe of hairs (fig. 4, *3, 4*); wing membrane with distinct pubescence. .. 23
23 (22). Mesepisternum more or less smooth and shiny. Body length 1.8–2.0 mm. — Hyperparasite of aphids. .... *D.* (*M.*) *bifoveatus* (Kieffer)
— Mesepisternum distinctly sculptured, dull. 24
24 (23). Frons with U-shaped depression behind interantennal carina; base of this depression with distinct denticle. Interantennal carina occasionally interrupted medially. Body length 3.0–3.2 mm. — Parasite of syrphid's puparia (Diptera, Syrphidae). .... *D.* (*M.*) *pupparum* (Boheman)
— Frontal depression has another shape or absent; frontal denticle indistinct or absent. Interantennal carina fully developed or completely absent. 25
25 (24). Toruli connected by the interantennal carina. 26
— Interantennal carina absent. 29
26 (25). Forewings hyaline, without fuscous pigmentation near pterostigma or radial vein (fig. 4, *3*). .. 27
— Forewings with fuscous pigmentation near pterostigma or radial vein. 28
27 (26). Base of hind coxae blackish-brown, their distal half yellow. A2 not shorter than A3 (fig. 4, *11*). Hindwings without anal lobe. Body length 2.5–2.7 mm. .... *D.* (*M.*) *basalis* (Thomson)
— Hind coxae entirely brownish-black. A2 clearly shorter than A3 (fig. 4, *12*). Hindwings with small, but distinct anal lobe. Body length 2.6–2.8 mm. — Parasite (probably secondary) of aphids, mainly from subfamamily Cinarinae (associated with coniferous forests) and subfamily Lachninae (associated with deciduous forests). .... *D.* (*D.*) *ramicornis* (Boheman)
28 (26). A3 distinctly longer than A2. Legs entirely yellow, basal half of hind coxae very rarely dark. There are also brachypterous forms. Body length 1.8–1.9 mm. Hyperparasite of different aphids, found in ant nests. .... *D.* (*M.*) *dubiosus* (Kieffer)
— A3 approximately equal or only slightly longer than A2 (fig. 4, *13*). Legs colour vary, but their distal parts usually dark. — Hyperparasite of aphids; primary parasite of Aphidiidae [*Aphidius* **(**Nees**)**, *Praon* **(**Haliday**)**, *Ephedrus* **(**Haliday**)**, *Diaretiella* **(**Stary**)**, *Binodoxus* **(**MacKauer**)** and *Trioxys* **(**Haliday**)]**. .... *D.* (*M.*) *aphidum* (Rondani)
29 (25). Head in dorsal view more or less round. Body length 2.5–2.7 mm. — Parasite of chamaemyiid's puparia (Diptera, Chamaemyiidae), which are predators of chermeses (Homoptera, Adelgidae). . ... *D.* (*M.*) *serricornis* (Boheman)
— Head in dorsal view clearly transverse. 30
30 (29). A2 1.3–1.5 times shorter than A3 (fig. 4, *15*). Body length 2.0–2.1 mm. — Recorded from *Remaudierea plocamaphidis* Stary (Aphidiidae), which is a primary parasite of aphid *Plocamaphis goernitzi* Borner, on wilow trees. .... *D.* (*M.*) *remaudierei* Dessart
— Length of A2 approximately equal to one of A3 (fig. 4, *16–18*). 31
31 (30). Notauli strongly convergent posteriorly, V-shaped, meeting or almost meeting median furrow at scutal suture, not strongly curved at the ends (look with a lateral light). Body length 2.0–2.1 mm. — Specialized gregarious hyperparasite of aphids from the subfamily Lachninae, on coniferous trees. .... *D.* (*M.*) *liebscheri* Dessart
— Notauli only slightly convergent posteriorly, U-shaped, not meeting median furrow or if they meet or almost meet median furrow, then they strongly curved at the ends. 32
32 (31). Legs uniolour, brown. Body length 2.3–2.5 mm. — Hyperparasite of different aphids. .... *D.* (*M.*) *carpenteri* (Curtis)
— At least forelegs and tibiae of midlegs light, brownish-yellow. Body length 1.5–2.4 mm. — Parasite of Diptera and aphidophagous Neuroptera. .... *D.* (*M.*) *breadalbimensis* Kieffer

In the Ukraine have been collected 14 species of *Dendrocerus*:

Dendrocerus aphidum (Rondani)

Material. 2 {, Ukraine, Zakarpats'ka oblast: «Закарпатская обл., Раховский р-н, ур. Менчул, 23.07.1972 (Кононова)» [Rahiv raion, Menchul, Kononova leg.]; {, «Закарпасткая обл., Раховский р-н, ур. Головач, 28.07.1972 (Кононова)» [Rahiv raion, Golovach, Kononova leg.]; {, «Закарпасткая обл., Раховский р-н, ур. Кукуль, 28.07.1972 (Кононова)» [Rahiv raion, Kukul, Kononova leg.]; {, «Закарпатская обл., окр. Рахова, 20.09.1994 (Симутник)» [vic. Rahiv, Simutnik leg.]; {, «Карпатский з-к, ур. Кузий, 18.07.1995 (Симутник)» [Karpatian Natural Reserve, Kuzyi, Simutnik leg.]; 3m, idem, «ур. Малая Уголька, 25–27.07.1995 (Симутник)» [Mala Ugolka, Simutnik leg.]; {, idem, 28.07.1995 (Червоненко) [Chervonenko leg.]; {, "Черновицкая обл., Путиловский р-н., с. Руська, 24.06.1975 (Кононова)» [Chernivtsy oblast, Putyliv raion, vil. Rus'ka, Kononova leg.]; {, Kyiv oblast: «Киевская обл., окр. Фастова, 11.07.1972 (Кононова)» [vic. Fastiv, Kononova leg.]; {, «Киевская обл., Конча-Заспа, 01.09.1996 (Радченко)» [Koncha-Zaspa, Radchenko leg.]; {, «Черкасская обл., Каневский з-к, 19.05.1972 (Кононова)» [Cherkasy oblast, Kaniv Natural Reserve, Kononova leg.]; {, idem, 15.07.1971 (Кононова) [Kononova leg.]; {, «Харьковская обл., Краснокутск, 15.06.1992 (Сторожева)» [Kharkiv oblast, Krasnoluts'k, Storozheva leg.]; 2 {, idem, 10.07.1992 (Сторожева) [Storozheva leg.]; {, idem, 11.09.1992 (Свиридов)

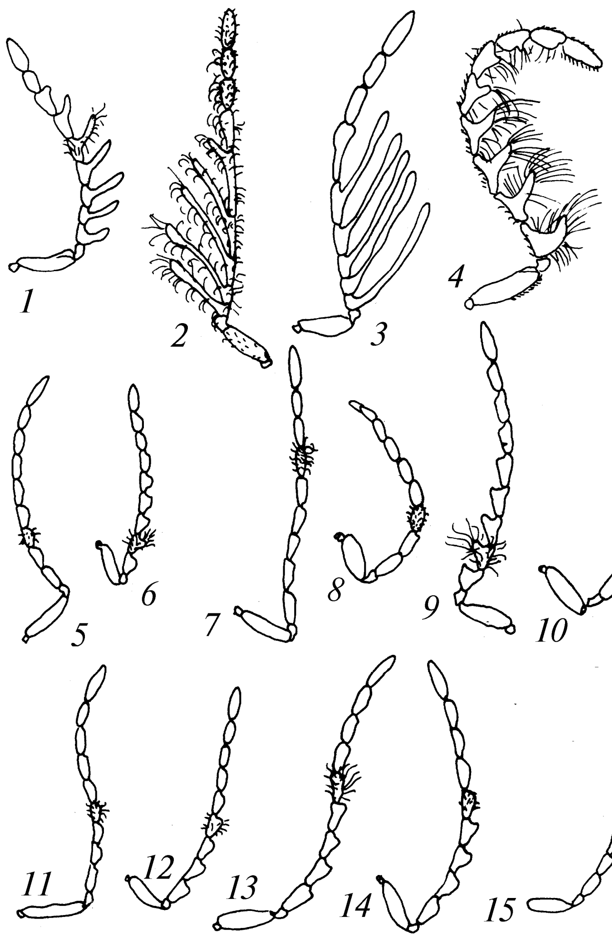


Fig. 3. Antennae of males of the genus *Dendrocerus: 1 — D. koyamai; 2 — D. halidayi; 3 — D. ramicornis; 4 — D. ergensis; 5 — D. laticeps; 6 — D. laevis; 7 — D. bifoveqtus; 8 — D. pupparum; 9 — D. serricornis; 10 — D. basalis; 11 — D. aphidum; 12 — D. carpenteri; 13 — D. remaudierei; 14 — D. liebscheri; 15 — D. breadalbimensis.*

Рис. 3. Усики самцов представителей рода *Dendrocerus: 1 — D. koyamai; 2 — D. halidayi; 3 — D. ramicornis; 4 — D. ergensis; 5 — D. laticeps; 6 — D. laevis; 7 — D. bifoveqtus; 8 — D. pupparum; 9 — D. serricornis; 10 — D. basalis; 11 — D. aphidum; 12 — D. carpenteri; 13 — D. remaudierei; 14 — D. liebscheri; 15 — D. breadalbimensis.*

[Sviridiv leg.]; {, «Запорожская обл., Васильевка, 11.07.1974 (Кононова)» [Zaporizhzha oblast, Vasylivka, Kononova leg.]; Crimea: {, «Крым, Чатырдаг, кордон Суат, 15.07.1979 (Кононова)» [Chatyrdagh, Suat, Kononova leg.]; {, «Крымский з-к, кордон Тарьер, 28.07.1976 (Кононова)» [Crimean Natural Reserve, Tar'er, Kononova leg.]; {, idem, «кордон Аспорт, 01.07.1976 (Кононова)» [Asport, Kononova leg.]; {, idem, «кордон Светлая Поляна, 03.07.1976 (Кононова)» [Sventlaya Poliana, Kononova leg.] (SIZK).

D. basalis (Thomson)

Material. {, Ukraine: «Закарпатская обл., Раховский р-н, ур. Кукуль, 26.07.1972 (Кононова)» [Zakarpats'ka oblast, Rakhiv raion, Kukul, Kononova leg.]; {, «Крымский заповедник, кордон Тарьер, 28.06.1976 (Кононова)» [Crimean Natural Reserve, Tar'er, Kononova leg.]; {, «Крым, дорога Алушта–Ялта, Ботаническое, 29.09.1990 (Кононова)» [Crimea, road Alushta-Yalta, Botanicheskoe, Kononova leg.] (SIZK).

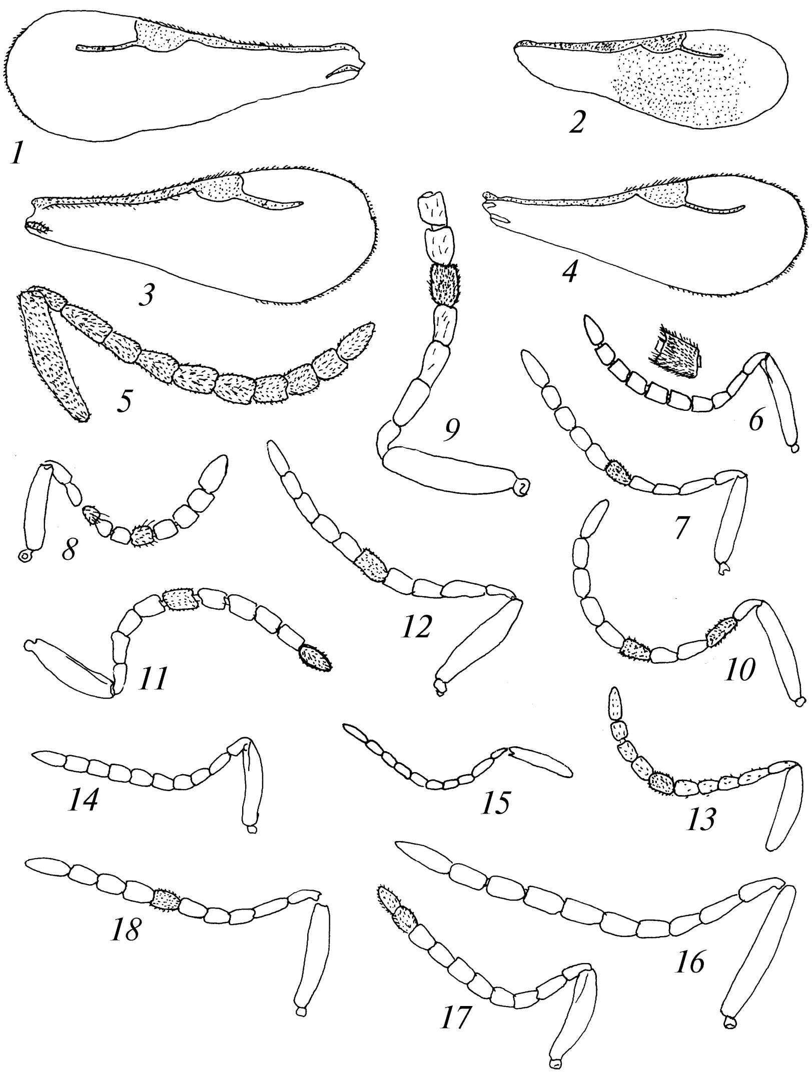


Fig. 4. Details of strucrture of females, subfamily Megaspilinae: *1, 5 — D. flavipes; 2, 9 — D. punctipes; 3 — D. basalis; 4 — D. breadalbimensis; 6 — D. halidayi; 7 — D. laticeps; 8 — D. laevis; 10 — D. bifoveatus; 11 — D. basalis; 12 — D. ramicornis; 13 — D. aphidum; 14 — D. serricornis; 15 — D. remaudierei; 16 — D. liebscheri; 17 — D. carpenteri; 18 — D. breadalbimensis. 1–4* — fore wings; *5–18* — antennae.

Рис. 4. Детали строения самок представителей подсемейства Megaspilinae: *1, 5 — D. flavipes; 2, 9 — D. punctipes; 3 — D. basalis; 4 — D. breadalbimensis; 6 — D. halidayi; 7 — D. laticeps; 8 — D. laevis; 10 — D. bifoveatus; 11 — D. basalis; 12 — D. ramicornis; 13 — D. aphidum; 14 — D. serricornis; 15 — D. remaudierei; 16 — D. liebscheri; 17 — D. carpenteri; 18 — D. breadalbimensis. 1–4* — передние крылья; *5–18* — усики.

D. breadalbimensis Kieffer

Material. {, Ukraine: «Херсонская обл., Аскания-Нова, 28.09.1974 (Кононова)» [Kherson onlast, Natural Reserve "Askania-Nova", Kononova leg.] (SIZK).

D. carpenteri (Curtis)

Material. 6 {, Ukraine: «Закарпатская обл., Раховский р-н, ур. Кукуль, 26.07.1972 (Кононова)» [Zakarpats'ka oblast, Rakhov raion, Kukul, Kononova leg.]; 4 {, idem, «ур. Головач, с. Богдан, 29.07.11972 (Кононова)» [vil. Bogdan, Golovach, Kononova leg.]; }, idem, 16.07.1995 (Симутник) [Simutnik leg.]; Kyiv oblast: {, «Киевская обл., окр. Фастова, 11.07.1972 (Кононова)» [vic. Fastiv, Ko-

nonova leg.]; 4 {, «Киевская обл., Обуховский р-н, с. Григоровка, 06.06.1989 (Червоненко)» [Kyiv oblast, Obukhiv raion, vil. Grygorivka, Chervonenko leg.]; {, «окр. Киева, с. Круглик, 17.07.1981 (Кононова)» [vic. Kyiv, vil. Kruglik, Kononova leg.]; {, "Poltava oblast, Zolotonisha, 25.08.1993, Gumovsky leg."; {, «Харьковская обл., Краснокутск, 10.07.1992 (Сторожева)» [Kharkiv oblast, Krasnokuts'k, Storozheva leg.] (SIZK).

D. halidayi (Curtis)

Material. {, Ukraine: «Закарпатская обл., окр. Рахова, Карпатский заповедник, 20.04.1994 (Симутник)» [Zakarpats'ka oblast, vic. Rakhiv, Karpatsky Natural Reserve, Simutnik leg.] (SIZK).

D. laevis (Ratzeburg)

Material. }, Ukraine: «Закарпатская обл., Карпатский заповедник, ур. Квасный 20.04.1994 (Симутник)» [Zakarpats'ka oblast, Karpatsky Natural Reserve, Kvasnyi, Simutnik leg.]; }, «Винницкая обл., п. Вороновица, 03.09.1992 (Кононова)» [Vinnitsa oblast, Voronovitsa, Kononova leg.]; {, «20 км южнее Киева, левый берег Днепра, 17.05.1997 (Радченко)» [20 km S of Kyiv, left banck of riv. Dniper, Radchenko leg.] (SIZK).

D. laticeps (Hedicke)

Material. }, Ukraine: «Киев, Новоселки, 10.07.1971 (Кононова)» [Kiyv, Novoselky, Kononova leg.]; }, «Херсонская обл., Черноморский заповедник, Соленоозерный участок, 17.07.1974 (Кононова)» [Kherson oblast, Chernomorsky Natural Reserve, Solenoozernyi distr., Kononova leg.]; {, idem, «Ивано-Рыбыльчанский участок, 03.09.1972 (Кононова)» [Ivano-Rybalchanskyi distr., Kononova leg.]; }, «Одесская обл., окр. г. Рени, 20.06.1971 (Кононова)» [Odessa oblast, vic. Reni, Kononova leg.]; }, «окрестности Днепропетровска, 23.06.1971 (Белан)» [vic. Dnipropetrovs'k, Belan leg.] (SIZK).

D. punctipes (Boheman)

Material. }, Ukraine: «Винницкая обл., Ямпольский р-н, с. Оксановка, 20—21.07.1988 (Кононова)» [Vinnits'ka oblast, Yampol raion, vil. Oksanivka, Kononova leg.] (SIZK).

D. pupparum (Boheman)

Material. {, Ukraine: «окр. Киева, с. Круглик, 17.07.1981 (Кононова)» [vic. Kyiv, vil. Kruglik, Kononova leg.]; {, «Винницкая обл., Ямпольский р-н, с. Александровка, 06.06.1974 (Кононова)» [Vinnits'ka oblast, Yampol raion, vil. Oleksandrivka, Kononova leg.]; Zakarpats'ka oblast: {, «Закарпатская обл., Раховский р-н, ур. Головач, 18.07.1972 (Кононова)» [Rakhov raion, Golovach, Kononova leg.]; {, idem, 28.07.1972 (Кононова) [Kononova leg.]; {, «Закарпатская обл., Мукачевский р-н, с. Лисарня, 12.08.1988 (Червоненко)» Mukachivo raion, vil. Lisarnia, Chervonenko leg.]; Odesa oblast: {, «Одесская обл., окр. Измаила, 16.08.1972 (Кононова)» [vic. Izmail, Kononova leg.]; {, idem, 19.08.1972 (Кононова) [Kononova leg.]; {, «Одесская обл., окр. Вилково, 26.05.1996 (Максимович)» [vic. Vilkovo, Maksimovich leg.]; {, «Одесская обл., заповедник "Дунайские плавни", о. Кубану. 12—13.08.1996 (Симутник)» [Natural Reserve "Dunaisky plavni", Simutnik leg.]; {, «Одесская обл., с. Беляевка, 07.07.1974 (Кононова)» [vil. Biliaivka, Kononova leg.]; {, «Харьковская обл., Краснокутск, 12.07.1992 (Сторожева)» [Kharkiv oblast, Krasnokuts'k, Storozheva leg.]; {, «Харьковская обл., Валковский р-н, с. Гончаровка, 10.06.1975 (Кононова)» [Kharkiv oblast, Valkivs'kyi raion, vil. Goncharivka, Kononova leg.]; 2m, «Запорожская обл., Обиточная коса, 24—26.08.1982 (Кононова)» [Zaporizhzha oblast, Obitochnaia kosa, Kononova leg.]; {, «Донецкая обл., Хомутовская степь, 25.08.1980 (Кононова)» [Donetsk oblast, Natural Reserve "Khomutovskaia step'", Kononova leg.]; idem, {, 13.06.1975 (Кононова) [Kononova leg.]; idem, {, 25.08—03.09.1989 (Кононова) [Kononova leg.]; 2 {, «Луганская обл., ст. Новая Ильенко, пойма р. Деркул, 14.06.1972 (Кононова)» [Lugansk oblast, st. Nova Il'enko, vall. riv. Derkul, Kononova leg.]; Kherson oblast: {, «Херсонская обл., Черноморский заповедник, уч. Волыжин лес, 24.05.1985 (Фурсов)» [Chernomorsky Natural Reserve, Volyzhin Les, Fursov leg.]; {, idem, Ивано-Рыбыльчанский уч., 05.05.1972 (Кононова) [Ivano-Rybalchansky distr., Kononova leg.]; {, idem, 05.09.1972 (Кононова) [Kononova leg.]; {, idem, Соленоозерный уч., 7—13.09.1991 (Сторожева) [Solenoozernyi distr., Storozheva leg.]; {, idem, 21—23.06.1991 (Сторожева) [Storozheva leg.]; {, idem, 28.08—05.09.1992 (Кононова) [Kononova leg.]; {, idem, 03.06.1971 (Кононова) [Kononova leg.]; 2 m, «Херсонская обл., о. Бирючий, 25—28.08.1983 (Кононова)» [Isl. Biriuchyi, Kononova leg.]; Crimea: 2 {, «окр. Алушты, с. Нижняя Кутузовка, 25.09—01.10.1990 (Кононова)» [vic. Alushta, vil. Nizhnia Kutuzivka, Kononova leg.]; {, «окр. Алушты, с. Виноградное, 13—15.09.1979 (Кононова)» [vic. Alushta, vil. Vinogradne, Kononova leg.]; {, «окрестности Старого Крыма, Ю склон г. Агармыш, 04.07.1979 (Кононова)» [vic. Staryi Krym, S slope Mt. Agarmysh, Kononova leg.]; {, «Судак, 05.1994 (Котенко)» [Sudak, Kotenko leg.]; 2 {, «Крымский заповедник, Светлая поляна, 07—11.09.1983 (Кононова)» [Crimean Natural Reseve, Svetlaia Poliana, Kononova leg.]; {, idem, «кордон Асиври-Тарьер, 01.07.1976 (Кононова)» [Asivry-Tar'er, Kononova

leg.]; 2 {, idem, 28.06.1976 (Кононова) [Kononova leg.]; 2 {, idem, «12 км от Алушты, 20.06.1976 (Кононова)» [12 km from Alushta, Kononova leg.]; {, idem, «кордон Аспорт, 19.06.1976 (Кононова)» [Asport, Kononova leg.] (SIZK).

D. remaudierei Dessart

Material. {, Ukraine: «Закарпатская обл., Раховский р-н, полонина Менчул, 23.07.1972 (Кононова)» [Zakarpats'ka oblast, Rakhov raion, Menchul subalp. meadow, Kononova leg.]; {, «Ивано-Франковская обл., Верховинский р-н, полонина Пожижевская, 26.06.1975 (Кононова)» [Ivano-Frankivs'k oblast, Verkhovyns'ky raion, Pozhyzhevs'ka subalp. meadow, Kononova leg.]; {, «Харьковская обл., Краснокутск, 26.08–03.09.1992 (Кононова)» [Kharkiv obalst, Kranokurs'k, Kononova leg.]; {, «Одесская обл., о. Стамбульский, 14.09.1996 (Симутник)» [Odesa oblast, Isl. Stambulskyi, Simetnik leg.]; {, «Крым, дорога Алушта–Ялта, Ботаническое, 29.09.1990 (Кононова)» [Crimea, road Alushta–Yalta, Botanicheskoe, Kononova leg.] (SIZK).

D. serricornis (Boheman)

Material. {, Ukraine: «Закарпатская обл., Раховский р-н, с. Зеленое, 98.07.1972 (Кононова)» [Zakarpats'ka oblast, Rakhov raion, vil. Zelene, Kononova leg.]; {, «окр. Киева, Новоселки, 14.05.1981 (Котенко)» [vic. Kyiv, Novoselki, Kotenko leg.]; {, «Киевская обл., Обуховский р-н, с. Григоровка, 06.06.1989 (Червоненко)» [Kyiv oblast, Obukhiv raion, vil. Grygorivka, Chervonenko leg.] (SIZK).

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